

Now you can plot in true

**3D**  
with **DIMEN-PLOT**  
**KITS OR ARRAYS**

### Uses

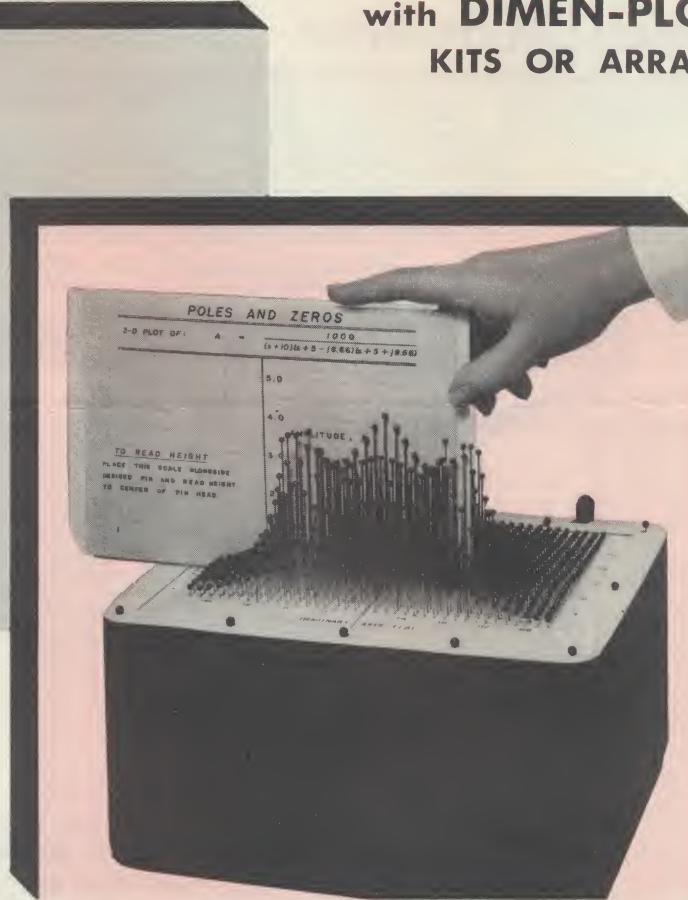
- RESEARCH
- DEVELOPMENT
- DESIGN
- EDUCATION
- SALES
- ADVERTISING
- ANALYSIS
- PRESENTATIONS
- DISPLAYS
- PACKAGING

### Features

- EASY TO USE
- QUICK TO PLOT
- ACCURATE
- INFINITE RESOLUTION
- RE-USABLE
- ANY SCALES
- ANY CO-ORDINATE SYSTEM
- PLOTS STORE INDEFINITELY
- EASILY READ
- 4-D & 5-D PLOTS BY VARYING HEAD COLOR AND HEAD SIZE

Here are some typical applications.

Is yours included?



## ENGINEERING AND SCIENCE

AEROSPACE—trajectories, space orientation, space gradients and fields  
ASTRONOMY—cosmological distributions, galaxy models, star structures, spatial distributions, orbits  
BIO-MEDICAL—vector cardiography, cell structures, organ shapes, EEG, data analysis, structural models  
CHEMISTRY—molecular models, material properties, periodic tables  
CIVIL ENGINEERING—topological maps, structural models, fluid flow  
COMPLEX PLANE—poles and zeros, filter design, servo design, stability studies  
COMPONENT AND MATERIAL CHARACTERISTICS—transistors, magnetics, dielectrics, plastics  
DIRECTIONAL PROPERTIES—antennas, loudspeakers, microphones, sonic transducers  
FREQUENCY ANALYSIS—f vs. t vs. intensity—speech, noise, shock, vibration, EEG, countermeasures  
MATHEMATICS—solid and analytic geometry, hyperbolic space, mathematical models  
MICROWAVES—space vectors, directional properties, space models, complex characteristics  
OCEANOGRAPHY—underwater properties, ocean floor topography, wave studies, ocean currents  
PHYSICS—Plasma properties, magnetic bottles, Fermi surfaces, nuclear models, X-ray analysis, nuclear properties, cloud chamber analysis  
PSYCHOLOGY—human factors, aging, vision experiments, data analysis  
SOCIOLOGY—population studies, ecology, multidimensional analysis  
SPACE GRADIENTS—field strength, dipoles, temperature, strain, stress, space charge  
STATISTICS—reliability, quality control, complex analyses, probability functions  
THERMODYNAMICS—heat flow, gradients, entropy functions  
WEATHER—cloud shapes, temperature and pressure distributions, hurricane research

## EDUCATION

Excellent for all quantitative or spatial subjects, particularly in mathematics, engineering and science.

## SALES & ADVERTISING

Advertising and Booth Displays  
Census Data Analysis  
Market Research and Analysis  
Sales Presentations  
Sales Projections

## BUSINESS & FINANCE

Bond Yields  
Cost Analysis  
Financial Analysis  
Forecasting and Scheduling  
Management Presentations  
Market Studies  
Stock Market Charting

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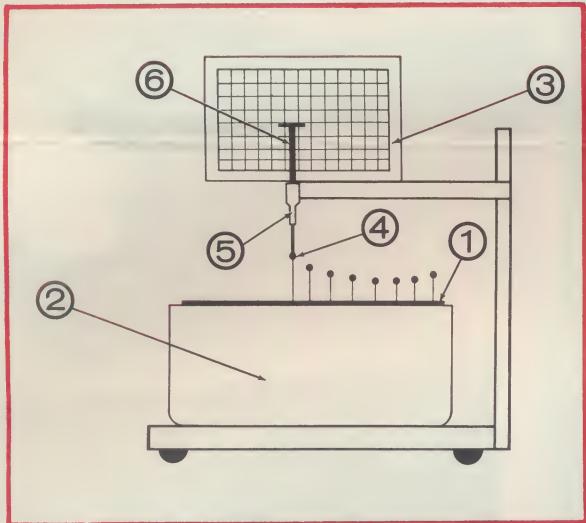
## PRINCIPLE

With the DIMEN-PLOT technique, the three-dimensional display of quantitative data in a volumetric region is obtained by locating headed pins at discrete points on a supporting base and by adjusting the height to which the pin heads project above the supporting base. The location of the pins on the supporting base defines two coordinates (X and Y) of a plotted point and the height defines a third coordinate (Z).

## DIMEN-PLOT KITS\*...

### FOR GENERAL-PURPOSE MANUAL 3D PLOTTING

A plotting table and pin guide assembly is provided with each kit to enable pins to be plotted uniformly straight. A pin may be plotted at any X, Y coordinate and set to any height Z. Pins remain in place once plotted or may be removed and re-plotted at any time. Accuracy is as good as the graph paper used.



### HOW TO PLOT

Choose a graph paper, 1, with desired horizontal (X and Y) scales and pin on top of plotting base, 2. Face desired side of vertical (Z) scale, 3, toward you. Place pin, 4, into pin guide, 5. Position plotting base until point of pin is over desired horizontal coordinates on graph paper, 1. Push pin down into plotting base with pusher, 6, until marker on pusher is at desired height on vertical scale, 3. Raise pusher, and insert next pin and repeat. To replot, remove all pins, replace graph paper, and plot again.

### HOW TO READ

Read horizontal (X and Y) coordinates directly on horizontal graph paper, 1, on top of plotting base, 2, where pins penetrate paper. To read height, slide vertical Z scale, 3, alongside desired pins and read height directly on scale, as shown in photograph on front page.

## DIMEN-PLOT KIT SPECIFICATIONS

Model Number of Kit	P18-18	P9-12	P6-6
Size of Plotting Base	18" x 18" x 6"	9" x 12" x 6"	6.5" x 6.5" x 6"
Pins: Overall height†	6"	6"	6"
Head Diameter†	9/64"	9/64"	9/64"
Head Shape	spherical	spherical	spherical
Number in Kit	1500	750	500
Plotting Table and Pin Guide Assembly	large	medium	small

†Longer pins and other heads available. See last page. All pins have nickel-plated steel shafts.

### A KIT CONTAINS

Plotting Table & Pin Guide Assembly  
Plotting base  
Set of pins in two head colors  
Pusher  
Vertical scale support sheet  
Assorted hardware  
Instruction Manual

## WHY 3D?

Sight is the most effective sense, by far, for conveying information to man. The natural three-dimensional characteristics of vision and the enormous information capacity of a volume compared to an area make the 3-D graph ideal for allowing complicated data to be quickly and readily grasped.

## PRE-PLOTTED DIMEN-PLOT ARRAYS\*...

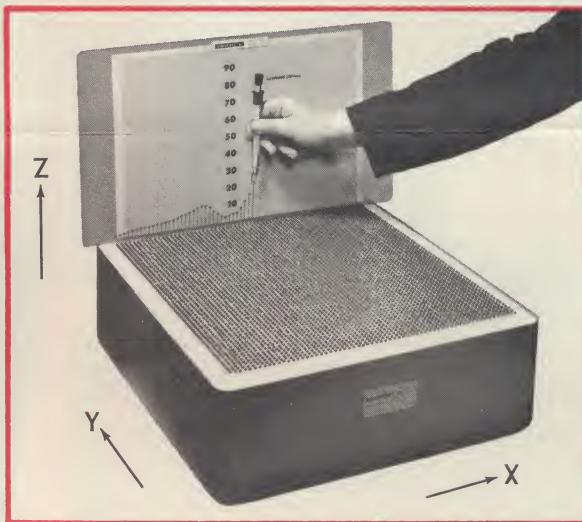
### FOR FASTER MANUAL 3-D PLOTTING

Pre-plotted arrays consist of pins pre-inserted into a plotting base in a uniform rectilinear pattern in horizontal (X and Y) directions. The user sets the height (Z) of each pin as desired. Compared to plotting with kits, plotting time is reduced because pins are already inserted in base. Disadvantage compared to kits is the lack of flexibility in selecting X and Y coordinates and type of pin.

A 64 x 64 array has a total of 4096 pre-plotted pins. The plotting area may be used for one 3-D plot of 4096 points; two separate plots of 2048 points; etc. Pre-plotted arrays use our standard 6" pins with spherical heads spaced  $\frac{1}{4}$ " apart. Any pin may be removed and a longer or other type pin may be manually inserted in its place (see last page for special pins). Pins are all one color unless specified otherwise. Arrays may be obtained with different colors interspersed by line, quadrant, etc.

### HOW TO PLOT

Simply set the height of each pin by raising to required height. A pin lifter-pusher and a plasticized vertical scale are supplied for convenience in setting heights. Pins remain in place once set. They may be reset at any time by simply raising or lowering with the pin lifter-pusher, using the vertical scale for accuracy. Plots may be stored or may be repeatedly changed indefinitely; there are no significant aging or wear effects.



### DIMEN-PLOT ARRAY SPECIFICATIONS

Model Number	Q64	Q42	Q22
Pin Array	64x64	42x30	22x22
Base Size	18"x18"x6"	12"x9"x6"	6.5"x6.5"x6"
Pin Spacing	$\frac{1}{4}$ "	$\frac{1}{4}$ "	$\frac{1}{4}$ "
Spare Pins	100	50	25

### AN ARRAY INCLUDES

Base with pre-plotted pins  
Pin lifter-pusher  
Vertical scale with cm and inch scales  
Spare pins  
Instruction manual

## ACCESSORIES AVAILABLE

**Plotting Bases:**

Standard:	Large 18"x18"x6"	Medium 9"x12"x6"	Small 6.5"x6.5"x6"
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Special: Specify length, width and height.

**Pins:**

Heads:	Standard: 9/64" diameter, in red, white, yellow, blue, green, turquoise, dark brown and black
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Special:	1/8", 3/16" and 1/4" diameter in red, white, black and crystal
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Lengths:	Standard: 6" (plotting heights, 0 — 5.5")
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Special:	10" (plotting heights, 4" — 9.5") 12" (plotting heights, 6" — 11.5")
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Any combination of available head size, length and color may be obtained.

**Vertical Scale:**

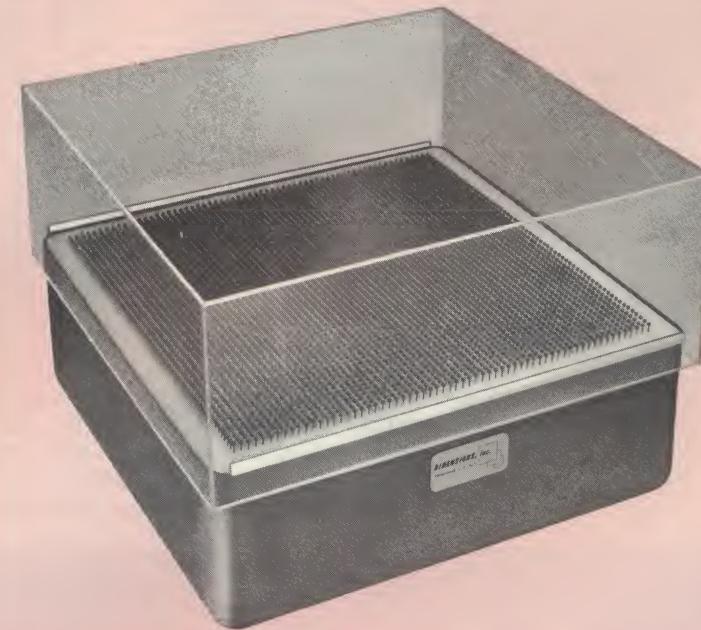
Standard:	cm units on one side, inch on the other
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Special:	any two scales, one per side
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**Transparent Dust Covers:**

Hard covers (shown at right with Q64 Array) are available for all standard and special base sizes and for clearance heights of 6" and 12".

**Carrying Case:** To order



## ORDERING INFORMATION

To order a kit or array, specify Model #. To order additional plotting bases and/or pins, specify size of plotting bases and length, head diameter and head color of pins. To order a transparent dust cover, specify type, base size and height. To order a non-standard vertical scale, specify the two scales desired and the base size to be used with.

## ADVANCED DISPLAYS

If you are interested in fully automated DIMEN-PLOT\* X-Y-Z plotters or in dynamic (all-electronic) three-dimensional displays, our Engineering Department will be able to assist you. Kindly let us know your requirements.

\*Patent Applied For

For further information please contact:

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# DIMENSIONS, inc.

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Hempstead, L.I., N.Y.  
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## PARTIAL LIST OF DIMEN-PLOT USERS

Aerojet-General Corp.  
Allison Div., General Motors Corp.  
American Cyanamid Company  
American Oil Company  
Atlas Chemical Industries, Inc.

Battelle Memorial Institute  
Bell Telephone Laboratories  
Bellcomm, Inc.  
Boeing Company  
Brookhaven National Laboratory

California Institute of Technology  
Canadian Celanese Company  
Canadian Dept. of Defense Production  
Chicago Board of Education  
Clarkson College of Technology  
Columbia University  
Combustion Engineering, Inc.  
Continental Can Co., Inc.  
Cornell Aeronautical Laboratory, Inc.  
Cornell University  
Corning Glass Works

Du Pont de Nemours & Co., Inc.

Eastman Kodak Company

Federal Scientific Corp.  
Ford Motor Company

General Electric Company  
Grace, W.R. Co., Research

Harshaw Chemical Company  
Harvard College Observatory

IBM  
ITT

Jet Propulsion Laboratory  
Johns Hopkins University  
Johnson's Wax

Lincoln Laboratory  
Los Alamos Scientific Laboratory  
Louisiana Polytechnic Institute

Marathon Oil Company  
Martin-Marietta Corporation  
Massachusetts Institute of Technology  
Microwave Associates

NASA  
National Bureau of Standards  
National Institutes of Health  
New York University Medical Center

Penn State University  
Pittsburgh Plate Glass Company  
Pratt & Whitney Aircraft Company  
Procter & Gamble

RCA  
Raytheon Company

Salomon Bros. & Hutzler, finance  
Sandia Corporation  
Standard Oil Co. of California  
Stanford University

Temple University

Union Carbide Corp., Chemical & Nuclear Div.  
U.S. Air Force, Hanscom Field  
U.S. Army: Biological Labs; Electronics  
Command; Picatinny Arsenal  
U.S. Navy: Underwater Ordnance Sta.;  
Underwater Sound Lab; Aviation  
Medical Center; Weapons Lab  
University of Kansas, M.E. Dept.  
University of Minnesota, Mines Exp. Sta.  
University of Pennsylvania,  
Dept. of Pharmacology  
University of Ottawa, E.E. Dept.  
University of Rochester, Geology Dept.  
University of Tennessee, Agricultural  
Research Laboratory

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